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Life History of a South American Slug-Caterpillar Sibine Fusca Stoll.

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See Plate XIII.

SIBINE FUSCA Stoll.

1781 *Bombyx fusca* Stoll, Pap. exot., pl. 307, fig. G.
1848 *Phalæna trimacula* Sepp, Surin. Vlind., i, pl. 45.
1855 *Nyssia trimacula* Walker, Cat. Brit. Mus., v, 1133.
1855 *Nyssia rufescens* Walker, Cat. Brit. Mus., v, 1138.
1878 *Streblota bonaërensis* Berg, Ann. Soc. Cient. Argent., v, 180.
1878 *Streblota bonaërensis* Burmeister, Desc. Rep. Argent., v, 151.
1883 *Sibine fusca* Möschler, Verh. z.-b. Ges., Wien, xxvii, 671.
1887 *Eupalia trimacula* Druce, Biol. Cent. Am. Lep. Het., i. 218.
1892 *Sibine nesea* Kirby, Cat. Lep. Het., 539 (nec Cramer).
1897 *Sibine fusca* Dyar, Can. Ent., xxix, 77.
1900 *Sibine fusca* Dyar, Proc. Ent. Soc. Wash.

LARVA.

1791 Stoll, Pap. exot., suppl., pl., xxi, fig. 2 (as *cælestina*).
1848 Sepp, Surin. Vlind., i, pl. 45.
1878 Berg, Ann. Soc. Cient., Argent., v, 181.
1894 Dyar, Ann. N. Y. Acad. Sci., viii, 217.
1897 Dyar, Can. Ent., xxix, 77.

SPECIAL STRUCTURAL CHARACTERS.

Somewhat flattened, rounded at the ends, the sides parallel; dorsal and lateral spaces broad, subventral space narrow. Ridges very slight, the subdorsal indicated by the change in direction of slope of the body, lateral and subventral ridges more distinct, approximate. Warts converted into fleshy, horn-like processes, unequally elongated, at first long and distinct, later reduced, non-functional, almost rudimentary. In stage I, the horns bear each three slender setæ; after the first molt, numerous urticating spines. The horns at the extremities are long, the central ones short; subventral row represented by two setæ. Arrangement of horns exactly as in *Sibine stimulea* (Journ. N. Y. Ent. Soc., iv, 2). Depressed spaces feebly developed, only their glandular centers distinguishable in the rather well-marked intersegmental incisures; but the largest ones conspicuous as they are marked with black pigment. Dorsal row (1) paired, distinct; (2) slight; (4) distinct; (6) slight. Skin at first smooth, next reticularly shagreened, then granular, finally spinulose. The change in color to that of the mature larva occurs before the last molt and the horns begin to be shortened at this time (stage VI.), indicating that the pattern of marking is comparatively old and fixed. The detachable spines and caltropes are present as in *S. stimulea*.

The larva does not show any ancestral characters during ontogeny. The horns are long at first, showing derivation from a long-horned ancestor. In the earlier stages some heavy black spots appear, which, in the mature larva, are represented only by the dark depressed spaces; this is the only ancestral character in the larvæ that indicates a former different color development, now early suppressed. I do not know its significance. The changes in skin sculpturing rather neatly show the probable evolution of this character in the phylum of the "tropic spined *Eucleids*." Thus the reticular lining is primitive, now retained in *Sisyrosea* and the early stages of *Natada;* next come the granules, shown in the late stages of *Natada* and in *Euclea* and *Adoneta;* finally the spinules of *Parasa* and *Sibine* (separately derived in these two genera).

AFFINITIES, HABITS, ETC.

S. fusca belongs to a genus of closely-allied species, which are not always to be distinguished except by the male genitalia. Nevertheless, the larvæ are very different. I have elsewhere given a table separating four species of larvæ (Can. Ent., 1897) and the remarks under *S. stimulea* will also apply here. This larva is more distinctly gregarious than *stimulea*. Sepp remarks: "La femelle dispose ses oeufs par paquets. Les chenilles qui en sortent, vivent quelques temps en société et se tiennent en mangeant rangées sur une ligne, les unes à côté des autres à la surface inférieure des feuilles." Later they separate. My larvæ exhibited these habits. The cocoon is spun on a branch or twig, as Sepp remarks. Berg also says: "La transformacion en crisálida tiene lugar en los troncos y ramas de los arboles." My cocoons were received evidently hastily broken from twigs by the collector, and in two instances a bunch of Mantis eggs was included in the sending and counted as a cocoon. Evidently, therefore, the cocoons are projecting and not inconspicuous objects on the trees. The species is single brooded, the moths appearing in November, the larvæ maturing probably about February or later. The males fly at dark, just after the twilight is gone and again in the early morning, the flight not lasting over an hour. My living specimens are all from the temperate climate of Argentina, so I do not know whether the species is more than single brooded in the tropics. It ranges from Argentina through Brazil, where Mr. Koebele encountered it (though he failed to rear the moths), to Surinam, as given by Sepp and Stoll. Mr. Druce records it from Mexico also and this may be so, though in the Biologia apparently all the forms of Sibine found in the region treated of are called by the name *trimacula* (=*fusca*).

The eggs are laid in large patches as in *S. stimulea*. The larvæ possess the usual urticating property. Mr. Koebele has labelled some cocoons from Caxanga near Recife, Brazil (Dec. 29, 1882), "Limacodes with stinging spines found on bark of casu tree; got badly stung." The larva is probably a rather general feeder, like *S. stimulea*. Sepp gives orange and citron as food plants. Berg gives "Membrillo" (*Cidonia vulgaris*), "Peral" (*Pyrus communis*) and "Viña" (*Vitis vinifera*) and

Mr. Ruscheweyh sent me the names "Olmo, Saibo and Damaña." My bred larvæ were not particular, taking anything from rose to Carex. The cocoons from which this life-history was worked out were sent me by Mr. G. Ruscheweyh, of Buenos Aires, Argentina. Mr. Ruscheweyh patiently collected and made sendings for three years, until finally success was achieved.

CRITICISM OF PREVIOUS DESCRIPTIONS.

Cramer's figure is rather better than Sepp's; both are recognizable. I have remarked on the larva and given most of the structural points of the last stage. Berg gives a lengthy account of the mature larva in which the coloration is fully described. He states that it (*bonærensis*) differs from that figured by Cramer and Sepp (*fusca*) in having black dots on the depressed spaces. This is true; but I do not regard it as of specific value. The Brazilian form differs from the Argentine one in a few other minor characters. I have before me a colored figure and an alcoholic larva from São Paulo, Brazil, kindly sent by Dr. H. von Ihering, the larva collected there on *Eugenia jaboticaba*. This agrees with Sepp's figure, and differs from the form *bonærensis* in lacking the black dots entirely, in having larger, more nearly circular patches of detachable spines and in lacking all purple color on the anterior dorsum. This area is entirely blue green like the subventral region. The black line separating the two shades of green shows very strongly in the alcoholic specimen.

These differences are not greater, I think, than might be expected in a species ranging over so wide an extent of territory.

DESCRIPTION OF THE SEVERAL STAGES IN DETAIL.

Egg.—Elliptical, flat, finely reticulated with raised lines, angularly and irregularly hexagonal; 2.2 × 1.2 × .1 mm. Laid in rather large masses, overlapping like shingles, the whole mass shining dark ocher yellow, rather opaque; the narrow margins of the eggs transparent, colorless. The eggs greatly resemble those of *Sibine stimulea* which are also dark yellow. Duration of the stage ten days.

Stage I.—Elongate, rounded rectangular sides parallel; ends rounded; dorsal and lateral spaces equal, moderate, concave,

subventral space contracted. Skin smooth, shining. Subdorsal horns on joints 3 to 13, those of 3, 4, 5, 11 and 12, not much larger than the others, but stouter and thicker, perhaps half again as long; that of joint 13 more remote, directed backward; lateral horns on joints 3, 4, 6 to 12, subequal, those of 3 and 4 slightly stouter. All horns thick, conic, blunt, rather short, each with three fine, stiff setæ radiating from the apex. The horns are separated from each other by a space equal to their own diameter. Color ocher yellow, the horns a little whitish; segmental incisures marked by grooves that appear somewhat more transparent than the rest of the larva. Length 1.4 mm. The horns and setæ are distinctly seen before the larva is out of the shell. No sign of eversion as in the larvæ with primitive first stage. Head small, round, eye black, mouth brown, labrum and labium prominent. The larvæ congregated in a mass and molted without feeding. Duration of stage three days.

Stage II.—Somewhat shorter and squarer, elongate elliptical, sides parallel, dorsal and lateral spaces even, broad, the dorsal flat, or like the lateral, a little concave. Horns large and thick, but not very long, not much over as long as thick. Subdorsals of joints 3 to 5, 11, 12 large, 6 and 10 small, 7 to 9 equal, small, but larger than those of 6 to 10; 13 small, about like those of 6 and 10. Laterals all moderate, 3 and 4 scarcely larger than the others. All densely covered with black-tipped yellow spines. Cervical shield large with many setæ anteriorly, contracted. Subventral space small. Segmental incisures well marked; a groove in the center of each transversely in the dorsal space, divided on the dorsal line, apparently representing depressed spaces (1). Whitish yellow, the horns clear yellow; no marks. Skin extremely finely shagreened, reticulate with light lines under a high power like that in the early stages of *Natada nasoni*. The larvæ fed gregariously, eating the parenchyma. Length 1.4 to 2.2 mm.

Stage III.—Somewhat flattened, like *Euclea delphinii*. Rounded, distinctly elliptical, the sides no longer parallel, but convex, ends rounded; dorsal and lateral spaces broad subequal, flat, dorsum arched a little, sides narrowing at the ends; subventral space small, contracted. Subdorsal horns of joints 3 to 5, 11 and 12 stout, conic, rather long, fully twice the

length of the short ones; that of joint 6 very small, but 7 to 10, 13 and the lateral horns about alike, short, conic or tapering, as long as the basal width, all densely spined. Body yellow, a narrow blackish dorsal line on joints 6 to 11 or 6 to 9, crossed by five faint blackish bars in the dorsal incisures; a rather distinct black blotch in the lateral space enclosing the depressed space (4) in its upper portion, situated in the incisure of joints 7–8; it is furcate on the lower side. Skin finely shagreened, lumpy, the reticulations taking the light distinctly as fine, low, almost flat granules. A large black patch on the cervical shield, ordinarily hidden under joint 3 when the hood is retracted. Later the dorsal markings wholly or partly disappear, but the lateral spot remains. Length 2.2 to 3.1 mm.

Stage IV.—Distinctly flattened and elliptical. Dorsal space broad, narrowing only at the ends; lateral space more elliptical, subventral very small. Ridges scarcely prominent, but the horns distinct, the subdorsal row leaning out a little and that of joint 5 sometimes backward. Subdorsals of joints 3, 4, and 5 successively longer, 5 twice as long as 3; 6 to 10, especially 6 and 10 very small; 11 and 13 successively smaller, matching the anterior horns. Lateral row all small, a little longer posteriorly, 3 and 4 even smaller than the rest. Horns all thick, rather blunt, densely spined, even the little ones, the spines long, sharp, with black tips. Color greenish yellow, a broken, blackish green, narrow dorsal line, cut by broken transverse black bars which form large blotches around depressed spaces (1); (2) represented by tiny black dots, somewhat diffuse and scatteringly punctate on joints 3 and 4. On the sides a faint greenish line in the middle of the lateral area, a large black patch about depressed space (4) of joints 7–8 and smaller ones on joints 4–5 and 10–11. That of 7–8 is quadrate, extending forward on joint 7 and all are composed of very black pigment. Spaces (4), (5) and (6) very minutely marked by black dots. There is a trace of a pinkish color in the large subdorsal horns. Skin very finely granular, but the peculiar shagreen wrinkles (like *Sisyrosea textula*, only less marked) persist around the bases of the horns. The granules are distinct in the exposed parts of the surface. Cervical shield large, black.

The black marks are pulverulent and irregular in shape, differing in different larvæ. Length 3 to 4.3 mm.

Stage V.—Shape as before and in all no essential change. Greenish yellow, depressed spaces (1) and (4) whitish, broadly surrounded with black, the other spaces not, or but faintly indicated. (1) paired except on joints 12–13, doubly paired on 3–4 and indistinctly so on 4–5. On the sides the spots are rather irregular, but there are no conspicuously large ones as before, (4) being surrounded by black on all the segments, most so toward the extremities; (6) also defined on some segments. Subdorsal horns of joints 3 to 5, 11 to 12 long, all the rest short, 6 and 10 especially so, all fully spined. The large horns have a purplish tint, due partly to the color of the spines, the short ones are yellowish, clearer, less opaque and less greenish than the body. Skin granular, the granules rather sparse and finely shagreened between, conic, even spinulose pointed, especially dorsally on the thorax, where each has black pigment in the base, elsewhere clear. The smallest horn is the subdorsal of joint 6, which has not over half a dozen spines. Cervical shield large, black, the rim smooth, with setæ. The pigment is more yellowish and opaque in the centers of the segments dorsally and laterally. The long horns are about as long as the diameter of the body, prominent. At the end of the stage the dorsal space and the lateral one above the lateral horns are filled in with bars of light green pigment except in the segmental incisures; but dorsally on joints 3 and 4 the bars are narrower. Long horns faintly purplish. Length of larva 4.3 to 6 mm.

Stage VI.—Somewhat flattened; dorsal space broad, flat, a little concave at first, curving over at the ends. Lateral space nearly perpendicular; lateral ridge projecting; subventral space small, retracted. Subdorsal horns on joints 5 and 11 moderately long, about half the height of the body, shorter than before both relatively and absolutely. Those of joints 3, 4 and 12 shorter than 5 and 11. Laterals moderate, about as long as wide, subequal. The subdorsals of 6 and 10 are very small, as before, 6 the smallest, 7 to 9 a little longer, all inconspicuous. Horns all densely spined. Horns, except the subdorsals of joints 6 to 10, faintly purplish. Color, two shades of green as in the

mature larva. Cold bluish green except in an area which is opaque yellowish green, covering the dorsal space from joint 5 posteriorly to joint 12, and laterally from 3 posteriorly to 12, continuous, except for the horns and depressed spaces. Segmental incisures well marked; depressed spaces (1) and (4) pale, strongly bordered with black. Joint 2 smooth, slightly purplish; cervical shield black. Skin rather densely covered with fine spinules, mostly sharp pointed. On the yellow green all are colorless, but on the blue green they are black, especially dorsally on joints 3 to 5. Only a few black spinules on the subventral blue green and these are above the bases of the lateral horns. A distinct ring of black spinules around the base of the subdorsal horn of joint 11 and less on joints 4 and 5. The horns lengthen during the stage, are distinctly purple (except the subdorsals of 6 to 10) and a purple shade appears centrally on the dorsum of joints 3–4, in the blue green. Length 6 to 8.8 mm.

Stage VII.—No essential change except the presence of a yellow border to the dorsal green and the caltropes. Shape as before, the horns all a little shorter and thicker at first. Subdorsals of joints 6 to 10 present as before, all several spined. Joint 2 pinkish, setose in front, spinulose on the sides; cervical shield deep black. Dorsal yellow green obscurely yellow on the edge all around, including a ring about the subdorsal horn of joint 11; without this a fine line of black spinules. Horns pinkish except the subdorsals of joints 5 and 11 which are cold blue green and those of joints 6 to 10, which are nearly colorless. That of joint 6 has only two or three spines and is sessile. Spines salmon-colored with black tips. Depressed space (1) and (4) pale, narrowly black edged; (6) indicated by a black dot. Patches of caltropes on the tips of the lateral horns of joints 6 to 12 and also on the lateral horn of joint 4 and even a few on top of the subdorsal horns of 5, 11 and 12; a distinct patch on the subdorsal of 13. Skin spinules black in the blue-green parts as before. Dorsum of joints 3–4 shaded with purplish as before. Length 8.8 to 11 mm.

Stage VIII.—As before, but the subdorsal horns of joints 4 and 12 as well as those of 5 and 11 are blue green, the others still pinkish; there is a narrow dark green edge to the blanket patch outside of the yellow and small imperfect patches of de-

tachable spines above the subdorsal horn of joint 13 and the lateral of 12. The subdorsal horns of joint 6 are obsolete, represented by only one seta; those of 7 to 9 still distinct, that of 10 small, about as 6 was in the stage before. The yellow green blanket patch reaches the middle of joint 5 exactly; it then runs forward on the sides, three-fourths encircling the subdorsal horn of 5, nearly half encircling that of 4, just touching the base of that of 3; its lower edge passes backward nearly straightly, just covering depressed spaces (6) to above the lateral horn of joint 12; then it proceeds slightly upward over the subdorsal horn of 12 and dorsally includes the single depressed space (1) of joints 12–13. It completely surrounds the subdorsal horn of joint 11, but does not appear to do so to the rudimentary subdorsals of 6 to 10, as they are concolorous or transparent. The yellow border about the subdorsal of 11 joins that about the edge of the blanket posteriorly. A white line along the subventral edge. General shape as in the mature larva; horns short, conic, the longest about as long as wide at the base; spines salmon-colored with black tips. Dorsum of joints 3 to 5 purple, shading to green on the edges; subventral area clear blue green; blanket opaque light yellow green, shading to yellow about the edges. Glandular dots (1), (4) and (6) ringed with rows of black spinules. Caltrope patches large, on the laterals 4 to 12 and subdorsal of 13; detachable spines brown. Skin spinules black on the dorsum of 3 to 5 and about edge of blanket; elsewhere colorless. A few caltropes on the ends of the long horns. Length 11 to 13 mm.

Stage IX.—No essential change. The detachable spine patches are still narrow and transverse. Head 2.0 mm. wide; caltropes in distinct patches on same horns as before. Length 13 to 17.5 mm.

Stage X.—The bars of detachable spines are a little larger, the subdorsal horns of joints 6 to 10 smaller, nearly rudimentary, some with none, others with 1 to 8 spines. Head 2.4 mm. wide. Some caltropes also on the lateral horn of joint 3 as on 4 to 13 and on subdorsal of 13, the patches becoming larger posteriorly, the largest on joint 13. All the horns are short, none higher than wide. Length 17 to 24 mm.

Stage XI.—Essentially as before. Detachable spines in large thick bands. Shape as described. Coloration as in the last

stages; dorsal yellow green blanket edged broadly with yellow, then narrowly with black-green; depressed dots (1), (4) and (6) black; dorsum of 3 to 5 purple. Horns all more or less blue, the spines salmon-colored; sides of the lateral horns dark green, subventral ridge lighter with a white line. Joint 2 in front pinkish, the cervical shield bisected into narrow, black brown divergent bars. Head 3.5 mm. wide. The dorsum of joints 2 to 5 is obliquely flattened, 11 to 13 sloping down; subventral space small and contracted. Horns short, sessile, all moderate and well spined except the subdorsals of 6 to 10 which are absent or represented by a few short spines. Head well retracted in the hood of joint 2. Spiracles round, reddish, that of 5 in the place of the lateral horn. Skin spines very dense, enlarged at the bases, becoming granules subventrally. Apices of the subdorsal horns bare or with a few large caltropes. Horns all distinctly shorter than before. Length 24 to 32 mm.

Cocoon with the characters of the group, spun with a veil as in *S. stimulea*. The location, exposed on a branch, is foreign to the habit of most Cochlidiidæ inhabiting temperate countries, but is often seen in tropical forms.

PARASITES.

Berg records the Dipteron *Systrophus nitidus* Wied as bred frequently from the cocoons. Two specimens of this fly (determined by Mr. Coquillett) emerged from my material. The fly comes out by the lid of the cocoon and its hard pupa case projects in the same way that that of the moth would have done. The fly appears later than the moths, about the time that the larvæ are in stage II, so that the egg is doubtless deposited at this early period.

EXPLANATION OF PLATE.

Ten figures showing the successive stages of the larva of *Sibine fusca*. The figures do not show the growth of the larva, being all drawn the same size, the relative magnification of each stage being less than the preceding. Stage I is magnified about 35 diameters and stage X about 2 diameters. The larvæ are not all drawn at the same period of the stage, some (as fig. 9) being only slightly grown in the stage and consequently flat, others (as fig. 10) being well filled out.

Notes on Some N. A. Geometrina and Pyralidina.

By Geo. D. Hulst.

GEOMETRINA.

Dr. Dyar writes me that Mr. Hampson made use of the term Epiplemidæ to express the family or subfamily called by Mr. Meyrick Strophidiadæ and by myself Strophidiinæ. Mr. Hampson's name has priority.

I think I am warranted in removing *Deptalia insularia* Guen. from the Sterrhidæ and placing it in a subfamily by itself to be called Deptaliinæ. In the hind wings it has the peculiar venation of the Sterrhidæ, but the fore wings are very decidedly different. The cell is very short, shorter than of any other Geometer I know of, and it is entirely anomalous in having veins 7, 8, 9, 10 and 11 on one stem.

Nycterosea Hulst, a genus of *Hydriomeniæ* (Tr. Am. Ent. Soc. xxiii, 263, 1896), is a synonym of *Tephroclystis* Hubn. In my classification *Tephroclystis* is said to have two accessory cells. It has one only.

Rhaphidodemas Hulst, described as a genus of the Ennominæ (Tr. Am. Ent. Soc. xxiii, 362, 1896), I find cannot be definitely separated from *Phigalia* Hubn.

The specimen I regarded as *deplanaria* Guen., upon which I made *Paraphia* Guen. distinct from *Amilapis* Guen., was not *deplanaria* at all. My determination was, therefore, incorrect, and the genus *Amilapis* must be a synonym of *Paraphia*.

In my classification I made *Emplocia* Guen. a synonym of *Melanoptilon* H. Sch. I made a mistake in this, and I do not know that *Melanoptilon* is represented in our Fauna. Our species will be catalogued under *Emplocia*.

I find upon further examination I cannot find a satisfactory distinction between the genera *Hyperitis* Guen. and *Xanthrotype* Warr. The type of the first is *amicaria* H. Sch. and of the second *crocataria* Fabr. In *crocataria* the wings are less angulate and the male scarcely at all angulate, but no line can be drawn between the species. *Hypocharia* H. Sch., has bipectinate antennæ in the ♀ and must be in the same genus, and gives in form a connecting link between the two other species.

From a ♁ in the collection of Dr. Barnes, I am able to give the structure of that sex in *Stergammatæa* Hulst, which was described from the ♀ only (Tr. Am. Ent. Soc. xxiii, 368, 1896).

Stergammataea ♂: Antennæ ciliate, filiform; thorax and abdomen not tufted; hind tibiæ with all spurs, swollen, and with hair pencil; fore wings without fovea below, slightly angulate; hind wings without fovea, outer edge wavy.

From a ♂ in the collection of Mrs. Slosson I am able to give the structure of that sex in *Spodolepis* Hulst, described from the only ♀ (Tr. Am. Ent. Soc. xxiii, 347, 1896).

Spodolepis ♂: Antennæ slender, slightly flattened, subdentate, very shortly pubescent; thorax and abdomen as in ♀; hind tibiæ somewhat swollen, without hair pencil, with all spurs; fore wings with fovea below; hind wings without fovea.

At the present time it seems to be acknowledged that whatever our personal opinions upon the subject of the names of the Tentamen of Hubner, it will save trouble and give uniformity if they are adopted. So in spite of my personal conviction, I yield to the opinions of others, and intend hereafter to use them. I find the date is uncertain, but there seems to be a fair agreement that it be written 1806. Having formerly regarded the date as 1810, one of the names, *Cyclophora*, could not be used for the genus known later as *Ephyra* or *Zonosoma*, as it was preoccupied. But with the date 1806, *Cyclophora* Hubn. has priority.

I find after an examination of British Entomology by Curtis, he gave the types of all the genera under which he described species. I very unfortunately did not note this fact, and so the species I gave as types of a number of these are incorrect. The type of *Speranza* Curt. is *sylvaria* Curt.; that of *Boarmia* is *consonaria* Ha., by which Curtis probably meant *crepuscularia* Hubn.; that of *Acidalia* as a Geometer is *aversata* L.; that of *Electra* is *ruptata* Hubn.; that of *Melanippe* Dup. is *alchemilliata* L.; that of *Aspilates* is *gilvaria* L.; that of *Ephyra* is *punctaria* L.; that of *Thera* Steph. is *variata* Schif.; that of *Hyria* is *auroria* Bork.; that of *Phibalapteryx* Steph. is *lineolata* Hubn.; that of *Siona* is *dealbata* L.; that of *Eubolia* is

chenopodiata L. All these genera remain synonyms, but in a few cases are synonyms of genera not those under which I placed them.

Sometime since, at my request, Sir George F. Hampson very kindly looked up some types in the British Museum, and has sent me the following determinations:

Thamnonoma gracilior Butl. is a synonym of *Emiltis* (*Acidalia*) *sentinaria* Hubn.

Pseudosiona Taylori Butl. is a synonym of *Dyscia* (*Aspilates*) *orciferata* Walk.

The type of *Stegania quadrinotata* Walk. is in the Oxford Museum, and is the same as *Heterophleps triguttata* H. Sch.

Acidalia albifera Walk. is the same as *Asthena albogilvaria* Morr., and antedates it.

Mr. Hampson sent me a colored figure of *Aspilates abbreviata* Walk., and it is the same as *Diastictis floridata* Hulst, and has priority.

The types of the following are not in the British Museum: *Acidalia arcticaria* Walk., *A. suppressaria* Walk., *A. inclusaria* Walk., *Aspilates donataria* Walk., *Tephronia pervelata* Walk., and *Phibalapteryx floridata* Walk. The types are either lost, or, what is more probable, have been placed with the species of which they were synonyms, and the type labels (which Mr. Walker did not place on the pin with the types but by their side) were not moved with them. There is scarcely a possibility these species will ever be recognized. They are, however, I believe, the only remaining species of Mr. Walker from our fauna, which are not known to us.

Mr. Schaus tells me, that, from an examination of the type, he has learned that *Micronia sitellata* Guen., *Gypsochroa* (*Phileremc*) *albosignata* Pack., *impauperata* Walk., and *hæsitata* Guen., are the same, *sitellata* being the oldest name.

I have lately seen a ♂ of *Xanthorhöe multilineata* Pack. It has flattened, naked antennæ, and so falls under *Hydriomena*, not *Xanthorhöe*.

A specimen was sent me from the National Museum with type label on it *Coremia demifasciata* Lintner. I do not know that it was ever described, but is the same as *latirupta* Walk.

Rheumaptera immediata Grt. was described from specimens

in the collection of Mr. Hill, of Albany, N. Y. The representatives of Mr. Hill say there is no such specimen now in the collection. It is not in the British Museum, where Mr. Grote's collection went. It is, therefore, lost, if it has not been accidentally overlooked in the collection of Mr. Hill.

On the authority of Mr. Hampson *Larentia frigidaria* Guen. is a synonym of *Psychophora sabinii* Curt.

Dr. Dyar writes me, *Eudule unicolor* Robs. is a synonym of *Eudule conformis* Walk. He also states that *Eudule texana* French is not a Geometer, but a Lithosian and a synonym of *Pogara simplex* Walk.

Mr. Hampson writes me that *Acidalia basipunctaria* Walk. is a Noctuid. He also thinks that *A. violacearia* Walk. is the same as *A. temnaria* Guen. My own study of the types led me to regard *temnaria* as a large *ossularia* Hubn., but I considered *violacearia* as a good species. Mr. Hampson has, I believe, determined *Melanomma auricinctaria* Grt. to be a Noctuid, and that *Meskea dyspteraria* is not a Geometer.

Antepione depontanata Grt. is a synonym of *Hypererythra arcasaria* Walk. A misunderstanding of my British Museum notes led me to make another, but an erroneous reference.

Another erroneous statement of my notes led me to say *Tephrina monicaria* Guen. was nearly identical with *fantaria* Hulst. It should have been *celataria* Hulst.

I have seen a ♂ of *Apæcasia* (*Lozogramma*) *bifilata* Hulst, and the species must in view of structure be removed to *Deilinia*. My impression is that *perpallidaria* Grt. is the same species, though I do not as yet feel certain enough to make the reference.

I have now a ♂ of *Emiltis floridata* Hulst, and it falls under *Eois* Hubn. The species is one with *Eois nimbicolor* Hulst. As there was an insect *Eois floridata* Pack., the name of *Eois floridata* Hulst will be *E. nimbicolor* Hulst.

Mr. Bruce writes me that *Tetracis trianguliferaria* Pack. var. *notataria* Hulst is the constant form of the species in Colorado. He says he has taken abont 50 specimens, all of the *notataria* form, none like Packard's *trianguliferaria*. In view of this we have good reason to regard *notataria* as a good species.

I have heretofore put *Glena* (*Tephrosia*) *texanaria* Hulst as

a synonym of *minimaria* Guen., for the reason that I saw in Guenée's collection a specimen with a type label upon it in Guenée's handwwriting. I am unable to find any description of the species by Guenée, and unless it was described, the name does not hold. It is very remarkable how many type labels have been put on specimens which have never been described, or have been described under other names. Certainly, of American species, when I was at the British Museum in 1894, there were not less than I should say 40 to 50 species thus labelled.

(To be continued.)

Goniops and other Synonyms.

By J. M. Aldrich.

I am greatly obliged to Mr. James S. Hine for pointing out the identity of my *Goniops hippoboscoides* with *Pangonia chrysocoma* O. S. I see on comparison that there is no doubt of the synonymy. Osten Sacken refers to the species as being rather different from the rest of those included in *Pangonia*, and I consider the genus *Goniops* a good one. The species will therefore be known as *Goniops chrysocoma* O. S.

I must confess to a feeling of sadness that this first-born of my entomological activity should be so early cut down. I have frequently consoled myself, when other work proved unsatisfactory, by reflecting on the brilliant discovery that I brought forward in that first paper!

In the few papers that I have published on the Dolichopodidæ, I have made several synonyms that I subsequently discovered for myself; these I believe should be recorded for the benefit of other workers in Diptera.

1. **Aptorthus** Aldrich, Kans. Univ. Quart., ii, 48, 1893.

This I recently found is identical with *Mesorhaga* Schiner, Novara, 217, 1868, described from South America. The species I described are all valid.

2. **Dactylomyia** Aldrich, l. c., 151.

The type, *gracilipes*, had been previously described by Loew as *Saucropus superbiens*. Later writers have rejected the genus *Saucropus*, placing the species under *Neurigona*. Since I have

become acquainted with several of the long-legged species of this genus, I do not think that there is any justification for *Dactylomyia*.

The synonymy in this case was made out independently by Professor Wheeler, and has been referred to by him in his recent extensive paper on the Dolichopodidæ (Proc. Cal. Acad. Sci., 1899).

3. **Metapelastoneurus** Aldrich, l. c., 152.

This genus was based on the peculiar development of the hypopygium in a species of *Pelastoneurus*. Since the time of establishing it, I have often doubted the advisability of using such characters, unless of very remarkable form, and accompanied with some other tangible marks of distinction. Recently I have been engaged in working up the Dolichopodidæ for the Biologia, and I find so many forms of hypopygium in the genus *Pelastoneurus* as to leave no doubt of the untenability of my genus. I discard the name the more willingly, from the fact that it is the most villainously compounded (with three or four exceptions) that I ever inflicted on a long-suffering public.

4. **Xanthotricha** Aldrich, Trans. Ent. Soc., London, 1896, 339.

This is identical with *Thrypticus* Gerstaecker, Stett. Ent. Zeit., 1866, 43. It has also been described by Wheeler under the name of *Aphantotimus*, which would have been prior to my name. Wheeler has referred with a doubt to this synonymy in his paper, p. 30. By the way, I may take occasion to remark that my *Th. minor* differs from his *willistoni* in having antennæ which are yellow, except the tip of third joint.

The flat or concave space before the scutellum cannot be a character of importance in this genus, as it does not occur in most of my specimens. As the species are minute and very soft, shriveling or drying, it is usually impossibie to speak with certainty on this point. When I described the genus, there seemed to be a difference from *Aphantotimus* in this part of the structure; but I am now convinced that it is evanescent.

5. **Chrysotus apicalis** Aldrich, loc. cit., 330.

This species has had such a checkered history that I can best express it by putting it in the form it might assume in a catalogue as follows:

Chrysotus barbatus

Loew, Neue Beitr., viii, 48; Mon. N. A. Dipt., ii, 38 (both male only, as *Synarthrus barbatus*); Neue Beitr., viii, 63; Mon. N. A. Dipt., ii, 175 (both female, as *Chrysotus validus*).

Wheeler, Ent. News, vii, 154 (*Xiphandrium americanum*).

Aldrich, Trans. Ent. Soc. Lond., 1896, 330 (*Chrysotus apicatis*).

The synonymy of *Xiphandrium* is on Wheeler's authority.

6. **Diaphorus approximatus** Aldrich, Trans. Ent. Soc. Lond., 1896, 321.

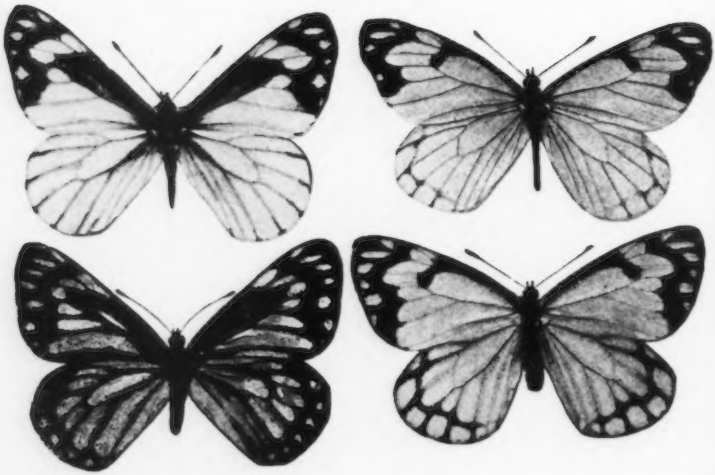
This is the same as our old friend *D. spectabilis* Loew.

A Headlong Plunge into the Synonymy.

HENRY SKINNER, M.D.

See Plate XIV.

In the April, 1900, NEWS, p. 415, I mentioned a Pierid under the name *Archonias lyceas*, from the Huachuca Mountains, Cochise Co., Arizona. This was a female, and was figured on Pl. II as No. 28. I first received a specimen for identification from Mr. O. C. Poling of Quincy, Illinois, and a little later another specimen from Dr. William Barnes. Godman and Salvin, in the Biologia Centrali-Americana, described *Archonias lyceas* in a brief comparative description, comparing *lyceas* with the figured species *dismorphites*. The Arizona specimen seemed to fit this description fairly well, although as there was some doubt in my mind in regard to my identification, I referred it to *lyceas* provisionally. Dr. Barnes, coming to the conclusion that my reference was incorrect, having received from Dr. W. J. Holland a drawing of *dismorphites* and a description of *lyceas*, sent me manuscript describing the Pierid as a new species under the name of *Archonias princetonia*, on account of its orange and black colors being the same as those of Princeton College. This was to have appeared in the NEWS for last May. In the meantime Dr. Strecker succeeded in obtaining a specimen of the insect from Mr. Poling. At a meeting of the Feldman Collecting Social, held in Philadelphia, April 18th, I, in a moment of thoughtless entomological enthusiasm, mentioned to Dr. Strecker the fact that Dr. Barnes had sent me a description of the species for publication in the NEWS, and that my reference was incorrect. I thought no harm could come from this as Mr. Poling had absolutely refused to exchange



Neophasia Terlootii Behr, ♂ Neophasia Menapia Felder, ♂

Neophasia Terlootii Behr, ♀ Neophasia Menapia Felder, ♀

you leap. I made a photographic negative of a male and female of the wonderful Arizona butterfly and printed it on platinotype paper and sent it to Dr. Herman H. Behr of the California Academy of Sciences. The male specimen I marked No. 1 and the female No. 2. The following is part of Dr. Behr's reply: "No. 1 of your drawing (photo) tallies perfectly with my type (captured by the Baron Terloot de Popelaire) which I still possess, but in a rather shattered condition. I have to communicate to you something else. I have heard about a caterpillar living in societies on a species of *Arbutus* (*Madrona*). These societies inhabit sacs of a paper-like substance almost impervious to water. I had several of these sacs sent me, but most of them contained only the exuviæ of the former inhabitants; only in three of them were found dead chrysalids and several butterflies crippled by the want of room for their development. These butterflies were my *N. terlootii*, and the ♀ answers to your No. 2. I do not know whether the fact is generally known that the larva of *N. menapia* feeds on conifers; therefore we need not be surprised to find another member of the genus feeding on rather unusual food for a Pierid—the Arbutus. In Java I found larva of *Delias coronis* on a species of *Capparis*, analogously related to Cruciferæ, like *Delias* to *Pieris*. In Australia I found the larvæ of two species of *Delias* on *Loxanthus preissii*, a parasitic shrub on which I never would have looked for Pierid larvæ."

As far as I am aware this butterfly has been unknown since 1869 until the present year. If Dr. Strecker had looked on page 74 (No. 25) of his Synonymic Catalogue, published in 1878, he would have saved about ten dollars, kept out of the synonymic consommé and given Dr. Barnes the pleasure of seeing his name *princetonia* in line number two. The synonymy stands thus,—

Neophasia terlootii* Behr, Trans. Am. Ent. Soc., ii, p. 304, 1868–69.

Archonias lyceas Skinner (not Godman and Salvin), Ent. News, xi, 415, 1900.

Neophasia epyaxa Strecker.

* The name as given in the original description (terlooii) was probably a typographical error.

his specimen, at least so far as I was concerned, and I knew the May NEWS was the first entomological journal to appear.

When I arrived at the Academy on the afternoon of April 19th, I learned that Dr. Strecker had visited the same institution, shortly after the janitor had arisen from his night's repose, and consulted the Biologia. In a couple of days I received by mail a single printed sheet, bearing the following:

"DESCRIPTION OF NEOPHASIA EPVAXA,
A NEW AND CURIOUS PIERID FROM ARIZONA.
By DR. HERMAN STRECKER, Reading, Pa., April 21st, 1900."

The paper begins: "A remarkable insect was figured in the last issue (April) of the ENTOMOLOGICAL NEWS." Further on the paper says,—"and serves to illustrate what a wonderland is Arizona." Now here was "a pretty kettle of fish." The editor of the NEWS had "let the cat out of the bag," and what was he to say to Dr. Barnes? Whether Dr. Strecker hired a special train to take him to Reading or whether he paid the printer a bonus for the sheet, red hot off the press, is not known. Doubtless the special sheet cost him quite a number of his good dollars.

Some time prior to the year 1868 the Baron Terloot de Popelaire, for reasons unknown to the writer, crossed the Sierra Madre Mountains in Mexico, on a line drawn between Mazatlan and Durango. At that time it was a wild and dangerous ride through an inhospitable country, and the region was infested by fierce Apache Indians. While on his journey, he came to the cold pine forest region and saw a butterfly fluttering at a considerable height between the fronds of the coniferous trees; it finally alighted on a *Loranthus*, the only plant in flower in the vicinity. For reasons known to himself he captured the butterfly and put it in his pocketbook. If you will turn to page 304 of the Trans. Am. Ent. Soc. for 1868–69, you will find the following: "*N. terlooii* nov. spec. *Alæ anticæ longitudinaliter dimidiate, dimidium superius nigrum, fascia maculari repanda alba intersectum, dimidium inferius cum alis posticis album.*"

Dr. Barnes recently sent me a male of the wonderful Arizona Pierid, and, strange to say, it was *black* and *white*. More wonderful still, it agreed perfectly with the above Latin description. But we should not plunge into these matters,—be sure before

Entomological Literature.

COMPILED BY P. P. CALVERT.

Under the above head it is intended to mention papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the anatomy, physiology and embryology of insects, however, relating to American or exotic species, will be recorded. The numbers in HEAVY-FACED TYPE refer to the journals, as numbered in the following list, in which the papers are published; * denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in brackets.

3. The American Naturalist, Boston, '00.—**4.** The Canadian Entomologist, London, Ont., '00.—**5.** Psyche, Cambridge, Mass., '00.—**7.** U. S. Department of Agriculture, Division of Entomology, Washington; Bulletins, technical series No. 8, '00.—**9.** The Entomologist, London, '00—**11.** The Annals and Magazine of Natural History, London, '00.—**15.** Biologia Centrali-Americana, London; pt clv, April, '00; rec'd. July 9.—**21.** The Entomologist's Record, London, '00.—**22.** Zoologischer Anzeiger, Leipsic, '00.—**30m.** Memoires de la Société Zoologique de France, xii, Paris, 1899.—**30b.** Bulletin of the same, xxiv, 1899.—**32.** Bulletin du Muséum d'Histoire Naturelle, Paris.—**35.** Annales, Société Entomologique de Belgique, xliv, Brussels, '00.—**40.** Societas Entomologica, Zürich-Hottingen, '00.—**41.** Entomologische Nachrichten, xxvi, Berlin, '00.—**49.** Termeszetrajzi Füzetek, xxiii, 1-2, Budapest, May 1, '00.—**55.** Le Naturaliste, Paris, '00.—**56.** Mittheilungen, schweizerischen entomologischen Gesellschaft, x, 6, Schaffhausen, March, '00.—**58.** Revista chilena de Historia Natural, Valparaiso, '00.—**81.** Biologisches Centralblatt, Erlangen, '00.—**84.** Insekten-Börse, Leipsic, '00.—**87.** Revue Scientifique, Paris, '00.—**97.** Zeitschrift für wissenschaftliche Zoologie, lxvii, 3, Leipsic, May 22, '00.—**98.** Travaux, Société Imperiale des Naturalistes de St. Petersbourg, Jan.-Feb., '00.—**101.** Rovartani Lapok, vii, 3, Budapest, March, '00.—**108.** The Agricultural Journal; published by the Department of Agriculture, Cape of Good Hope, Cape Town, '00.—**109.** Proceedings, Royal Society of Queensland, xv, Brisbane, '00.—**116.** Biological Bulletin, i, 3, Boston, May, '00.—**123.** Bulletin, Wisconsin Natural History Society (n. s.); i, 2, Milwaukee, April, '00.—**130.** Proceedings, Manchester [New Hampshire] Institute of Arts and Sciences, i, '00.—**131.** Proceedings, South London Entomological and Natural History Society, '99.—**132.** Popular Science, New York, '00.—**133.** Bulletin, Société des Sciences de Nancy (3), i, 3, March, '00.—**134.** Arbeiten aus der biologischen Abtheilung für Land und Forstwirthschaft am kaiserlichen Gesundheitsamte, i, 1, Berlin, '00.

THE GENERAL SUBJECT.—Adams, C. C. Insects that live in

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

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PHILADELPHIA, PA., SEPTEMBER, 1900.

The annual meeting of the Association of Economic Entomologists was held at Columbia University, New York, on June 22d and 23d. Among those present were C. P. Gillette, L. O. Howard, F. M. Webster, James Fletcher, H. T. Fernald, A. D. Hopkins, W. G. Johnson, R. S. Clifton, A. F. Burgess, C. P. Lounsbury, E. B. Southwick, C. M. Weed, Trevor Kincaid, E. P. Felt, A. H. Kirkland, W. M. Scott and A. L. Quaintance. The papers read were interesting and valuable, and the meeting was characterized by scientific enthusiasm and zeal for the work. The atmosphere that pervaded the meeting was for progress, and each man seemed anxious to further the science of economic entomology. The different States represented get a valuable return for the services of these men, who appeared to be interested in their studies for the science and for the benefit of their respective communities. How different is it here in Philadelphia and in the great State of Pennsylvania where all is politics and jobbery. The city and State expend considerable sums of money and get practically no return. The official entomologists of the other States mentioned injury by insects which represented hundreds of thousands of dollars in money value. We never hear anything of injurious insects in this State, and the only natural inference is that there are no injurious insects here. The citizens of the State of Pennsylvania do, however, get some information in regard to injurious insects, but in a beggarly way, as the State pays nothing for this service. These sources of information are the American Entomological Society and the State entomologists of Ohio and New Jersey respectively. Pennsylvania is in the slough of political darkness; will she ever awaken?

running water, Nature and Art, Chicago, June, 1900.—**Anon.** On the odor of blossoms as a means of attracting insects, **84,** July 5.—**Bachmetjew, P.** The variation of the critical point in different individuals of one and the same species of insect, **40,** April 1; The vital minimum temperature in insects dependent upon the time [of exposure], **40,** June 15, July 1.—[**Bastian**]. On the psychic life of insects, **84,** July 5.—**Bordage, E.** On the special protection of appendages, in process of regeneration, after artificial mutilation among insects [transl. from French orig.], **11,** June.—**Cockerell, T. D. A.** and others. [On the relative stability of tropical and temperate species], **131.**—**Faussek, V.** Autotomy and sensibility to pain in the animal kingdom, Naturwissenschaftliche Wochenschrift, Berlin, June 10, 17, 1900.—**Field, H. H.** Condemnable practices in generic revisions, **4,** June.—**Florentin, R.** Studies on the fauna of the salt marshes of Lorraine, Annales des Sciences Naturelles, Zoologie, (8) x, 4-6, Paris, April, '00.—**Grænicher, S.** The fertilization and insect visitors of our earliest entomophilous flowers, **123.**—**Krick, E.** Entomology and the school [in Magyar], **101.**—**Lucas, R.** (General) and **Seidlitz, G.** (Coleoptera). Report on the scientific results in the field of entomology during the year 1897. Archiv für Naturgesch. lxiv, ii, 2, 1 Hälfte. Berlin, April, 1900.—**Pic, M.** Some words on variation, **55,** May 15.—**Plateau, F.** New researches on the relations between insects and flowers, 2nd part: the choice of colors by insects, **30m**; Experiments on the attraction of insects by colored sniffs and shining objects, figs., **35,** 4, May 14.—**Prenant, A.** The cell notion and tracheal cells, figs., **133.**—**Prowazek, S.** On the physiology of the nerves of insects, Der Zoologische Garten, xli, 5, Frankfurt a. M., May, 1900.—**Rudow.** Further contribution to the size-relations of insects, **84,** June 14.—**Thaxter, R.** Preliminary diagnoses of new species of Laboulbeniaceæ, ii, [fungi parasitic on insects]. Proceedings, American Academy of Arts and Sciences, xxxv, 21, Boston, April, 1900.—**Trouessart, E.** The Acarines and insects of the shafts of feathers, syringobial parthenogenesis, Volume Jubilaire Cinquantenaire, Société de Biologie de Paris, '99.—**Tutt, J. W.** The nature of metamorphosis, **131.**—**Ule, E.** Miscellany on the influence of animals on plant life, Berichte, deutschen botanischen Gesellschaft, xviii, 3, Berlin, Apr. 25, '00.—**Verson, E.** On the function of the giant cells in the testicular follicles of insects, Atti. R. Istituto Veneto di Scienze, Lettere ed Arti, lvii. Venice, Mar. 26, '99.

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Gardener's Chronicle, London, June 9, '00.—**[Editor].** Locust fungus, **108,** Apr. 12.—**Fernald, H. T.** and **Hinds, W. E.** The grass thrips *Anaphothrips striata* Osb.; Treatment for thrips in greenhouses, 1 pl. Bulletin 67, Hatch Experiment Station of the Massachusetts Agricultural College, Amherst, Mass., May, 1900.—**Fletcher, J.** Recent additions to the list of injurious insects of Canada, figs. Transactions, Royal Society of Canada, v, 4, Ottawa, 1900.—**Frank.** The peabeetle [*Bruchus pisi* L.] its agricultural significance and the combatting of it, 1 pl., **134.**—**Fuller, C.** Locust destruction in Natal, **108,** May 10.—**Gillette, C. P.** Apiary experiments, 6 pls., Bulletin 54, Agric. Exper. Station, Agric. College of Colorado, Fort Collins, Colo., May, 1900.—**Harrison, A.** President's address [summary of the relation of mosquitoes to malaria, etc.], **131.**—**Hart, J. H.** The locust disease fungus [on the parasol ant], Bulletin, Botanical Department, Trinidad, No. 23. Port-of-Spain, April, 1900.—**Illidge, R.** Miscellanea entomologica, or odd notes on the history and transformation of various insects [chiefly attacking figs.], **109.**—**Jennings, A. H.** Locust extermination in Mqanduli district [S. Africa, by fungus paste], **108,** March 29.—**King, G. B.** The Coccidæ of the ivy, **4,** July.—**Kuhlgatz, T.** [Notice of] Frank u. Friedr. Krüger: "Schildlausbuch. Beschreibung und Bekämpfung der für den deutschen Obst- und Weinbau wichtigsten Schildläuse. Bearbeitet für die Praxis. Berlin, Paul Pasey, 1900, **81,** May 1.—**Kumm.** Communications on the San José scale, Schriften der naturforschenden Gesellschaft in Danzig, (N. F.) x, 1, 1899.—**Lea, A. M.** Visiting entomologist and useful insects, **108,** May 10.—**Lounsbury, C. P.** Tickheartwater experiment, **108,** May 24.—**Lüstner, G.** On a new gallfly of the grapevine, *Clinodiplosis vitis* nov. sp. 1 pl., **41,** 6. Mar., '00.—**Manson, P.** Malaria and the malarial parasite, Popular Science Monthly, New York, July, '00.—**Martin, G. W.** Locust extermination [by fungus] in America, **108,** Apr. 26.—**Rörig, G.** Researches on the stomachs of birds important to agriculture and forestry, **134.**—**Ross, R.** Malaria and mosquitoes [French transl.] **87,** June 23.—**Santini de Riols, E.** The silks of *Bombyx mori,* of bivalves and of the spider, **55,** June 1.—**Sch., S.** The kissing bug, **84,** July 12.—**Serre, P.** Notes on American zoology [kissing bug], **30b.**—**Shirley, J.** Mosquitoes and malaria, **109.**—**F. S.** Notice of C. Schwalbe's "Beiträge zur Malaria-Frage." Heft. i. "Die Malaria und die Mosquito." Berlin, 1900, Naturwissenschaftliche Rundschau, Braunschweig, May 26, '00.—**Weed, C. M.** Insect record for 1899, figs., Bulletin 72, New Hampshire College Agric. Exper. Station, Durham, N. H., Feb., '00; The forest tent caterpillar, 2nd report, figs., Bulletin 75 of the same, May.—**Wilcox, E. V.** Abstract of recent publications, Experiment Station Record, U. S. Dep't of Agriculture, Washington, xi, 9, 10, 1900.

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Borelli, A. Some scorpions of Chile, **58,** May.--**Cambridge, F. O. P.** Arachnida Araneidea, ii, pp. 121-128, pl. viii [*Sparassus*, etc.]*, **15.**--**Kræpelin, K.** Catalogue of the Solifugæ (?) of the Museum, **32,** '99, No. 7; On some new Arachnids*, figs, Abhandlungen, Naturwissenschaftlichen Verein in Hamburg, xvi, 1, 1900; Rec'd July 12.—**Neumann, G.** Revision of the family Ixodidæ, 3rd mem, figs.*. **30m.**—**Pocock, R. I.** Some new or little-known neotropical scorpions in the British Museum*, **11,** May.—**Santini de Riols, E.** See Economic Entomology.—**Schimkewitsch, W.** On the influence of wounds on the eggs of spiders, due to the bites of ichneumonid larvæ, figs. [in Russian, abstract in German], **98.**—**Simon, E.** List of the Arachnida collected by M. Charles Porter in 1898-9 and descriptions [in Latin] of new species, **58,** April.—**Theresa,** Princess of Bavaria. Myriapods and Arachnoids collected in South America, figs. [with descriptions by **G. Attems** and **Penther**], **22,** May 14.—**Wolcott, R. H.** New genera and species of North American Hydrachnidæ*, 4 pls., Transactions, American Microscopical Society, xxi, Lincoln, Neb., 1900.

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ORTHOPTERA.—Berg, C. On some Chileno-Argentine Anisomorphidæ [in Spanish], Communicaciones, Museo Nacional de Buenos Aires, i, 5, Dec. 30, '99. [Incorrectly placed under Coleoptera in the NEWS, vol. xi, p. 443].—**Bordas, L.** Study on the digestive apparatus of *Brachytrupes achatinus*, Stoll., Comptes Rendus, L'Academie des Sciences, Paris, July 2, '00.--**Burr, M.** Note on the geographical distribution of the Eumastacidæ, **21,** June 1; Notes on the Forficularia, v. Descriptions of new species and a new genus*, **11,** July.—**Cockerell, T. D. A.** Note on some red and blue pigments [of Acrididæ], Nature, London, May 10. '00,—**Donisthorpe, H. St. J. K.** Myrmecophilous Orthoptera, **21,** June 1.—**Fogg, S. C.** Preliminary notes on the Orthoptera in the vicinity of Manchester, **130.**—**Giardina, A.** On the biology of the Mantidæ, 2 pls., Giornale di Scienze Naturali ed Economiche pubblicato per cura della Societa di Scienze Naturali ed Economiche di Palermo xxii, 1899. Rec'd June 13, 1900.—**Hunter, S. J.,** and **Sutton, W. S.** The Melanopli of Kansas, **5,** June, July, Aug.—**M'Clung,**

C. E. The spermatocyte divisions of the Acrididæ, 3 pls., Bulletin University of Kansas, i, 2 (Kansas University Quarterly, ix, 1) Lawrence, Kans., Jan., 1900.—**Rodzianko, V. N.** On the method of appearance of the egg cocoons of some locusts (Acrididæ) [in Russian] Bulletin, Société Imperiale des Naturalistes de Moscou, '98, No. 4, '99.—**de Saussure, H.** Orthoptera, pp. i–x, title page, **15.**—**Scudder, S. H.** The species of *Hadrotettix*, a genus of Œdipodinæ*, **5,** June; Note on the Orthopteran genus *Leprus* Saussure, **5,** July.

NEUROPTERA.—Burnham, E. J. See notice, *post.*—**Campos, F.** Entomological observations, *Lepthemis vesiculosa* Fabr. attacking Lepidoptera Rhopalocera [in Spanish], **58,** April.—**de la Croix, E.** Observations on *Termes carbonarius* Haviland, fig., **32,** 1900, No. 1.—**Förster, F.** See notice, *post.*—**Kellogg, V. L.,** and **Kuwana, S. I.** Mallophaga from Alaskan birds,* 1 pl., Proceedings, Academy of Natural Sciences of Philadelphia, 1900, pt. i, May 29, 1900.—**Mansion, A.** Frogs and dragonflies, **87,** June 30.—**Schenkling, S.** Termites as fungus cultivators, **84,** May 17.—**Wasmann, E.** The guests of ants and termites [translated from orig.], **21,** May 15 to Aug. 1.—**Williamson, E. B.** See notice, *post.*

HEMIPTERA.—Baker, C. F. Notes on *Idiocerus* (Jassidæ), **4,** July.—**Ball, E. D.** Some new Jassidæ from the southwest,* **4,** July.—**Bogue, E. E.** A new species of *Kermes**, **4,** July.—**Champion, G. C.** Rhynchota Heteroptera, vol. ii, pp. 313–336 [Anthocoridæ]*. **15.**—**Cholodkovsky, N. A.** On the digestive apparatus of *Laphria* [In Russian, brief abstract in German], **98.**—**Cockerell, T. D. A.** The name of the cochineal, Science, New York, June 22, '00; *Macrocephalus arizonicus=uhleri* [and] Eggs of *Ceroplastes irregularis*, **9,** July; see also Economic Entomology.—**Distant, W. L.** Rhynchotal notes, iv, Heteroptera, Pentatominæ (part) (concl.), **11,** May; v. Heteroptera: Asopinæ and Tessaratominæ, **11,** July.—**King, G. B.** The genus *Kermes* in North America*, figs., **5,** July; see also Economic Entomology.—**Kirkaldy, G. W.** Recent notes on *Hydrometra martini* Kirk.= *lineata* Say, **9,** June.—**Osborn, H.** The genus *Scaphoideus*, 2 pls.* Journal, Cincinnati Society of Natural History, xix, 6, June 26, '00; Description of a new species of *Hæmatopinus**, **4,** July.—**Quaintance, A. L.** Contributions towards a monograph of the American Aleurodidæ*, 8 pls., **7.**—**Uhler, P. R.** Aids to recognition of some North American genera and species of the old family Fulgoridæ.* Transactions, Maryland Academy of Sciences, 1900, Baltimore, May 25.

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figs. [in Magyar], **101.—Escherich, K.** On the regular occurrence of budding fungi in the intestinal epithelium of a beetle [*Anobium paniceum*], figs., **81,** May 15, '00.—**Fall, H. C.** Revision of the Lathridiidæ of boreal America, 3 pls. Transactions, American Entomological Society, xxvi, 2, Philadelphia, Dec., '99.—**Fleutiaux, E.** Description of a new *Protelater* from Chili, **30b.—Hopkins, A. D.** American fossil Coleoptera referred to the Scolytidæ, fig , **5,** June.—**Horn, W.** On some Cicindelæ of the United States,* **41,** 7, 8, April.—**Olivier, E.** The Lampyrid types of the Museum, **32,** '99, No. 7; Revision of the Lampyrid Coleoptera of the Antilles and descriptions of new species, **30b.—Pic, M.** Contribution to the study of the Ptinidæ of Central and South America, **35,** 6, June 29.—**Planet, L.** Monographic essay on the Coleoptera of the genera Pseudolucanus and Lucanus, figs., **55,** May 1.—**Rabes, O.** To knowledge of egg formation in *Rhizotrogus solstitialis* L., fig., 1 pl., **97.—Schenkling, C.** Strangers among the Central European beetles, **84,** May 17.—**Seurat, L. G.** Observations on the external genital organs of Coleoptera, **32,** '99, Nos. 7, 8.—**Sharp, D.** Coleoptera, vol. ii, pt. 1, pp. 609-624 [Cryptophagidæ]*, **15.—Tornier, G.** The origin of malformations in beetles, especially hyperantennism and hypermely, figs., 1 pl., Archiv für Entwicklungsmechanik der Organism, ix, 4, Leipsic, May 22, '00.—**Waterhouse, C. O.** New species of the Coleopterous genus *Prionocalus* from Ecuador and Peru, figs., **11,** June.

DIPTERA.—Bezzi, C. M. On the occurrence of the genus *Chioneæ* Dalman in Italy, and the reduction of the wings in the Diptera, Rendiconti R. Istituto Lombardo di Scienze e Lettere (2) xxxiii, 9. Milan, 1900.—**Brues, C. T.** Peculiar tracheal dilatations in *Bittacomorpha clavipes* Fabr., **116.—Cockerell, T. D. A.** *Diplosis partheniicola*, n. sp.*, **9,** July.—**Colledge, W. R.** Observations on the life history of the common Mosquito, 2 pls., **109.—Howard, L. O.** The differences between malarial and non-malarial mosquitoes, figs., Scientific American, New York, July 7, 1900.—**Kertesz, C.** Catalogue of the Tabanidæ of the entire world. Budapest, 1900. Pp. 1-79. [In Latin. Bound in with **49**].—**Lécaillon, A.** On the relations between the larva and the nymph of the mosquito (*Culex pipiens*) and the surrounding medium, figs., Bulletin, Société Philomathique de Paris (n. s.) i, 4, '99.—**Melander, A. L.,** and **Brues, C. T.** New species of *Hygroceleuthus* and *Dolichopus*, with remarks on *Hygroceleuthus*, figs.,* **116.—Pratt, H. S.** The embryonic history of imaginal discs in *Melophagus ovinus* L., together with an account of the earlier stages in the development of the insect, 7 pls., Proceedings, Boston Society of Natural History, xxix, 13, June, '00.—**Prenant, A.** The tracheal cells of the larva of the *Œstrus* of the horse, **133.—Stein, P.** The Tachininæ and Anthomyinæ of Meigen's collection in Paris, **41.** 9, 10, May.—**Webster, F. M.** Some species of Diptera inhabiting or frequenting the wheat fields of the middle West, **4,** July.—See also Economic Entomology, various authors.

LEPIDOPTERA.—Agassiz, G. Catalogue of the variations and aberrations in my collection, Macrolepidoptera of the palæarctic zone, **56.—Beutenmüller, W.** A new *Sesia* from Alaska*, **4,** July.—**v. Bönninghausen, V.** The Uranidæ of the Old and the New Worlds, Verhandlungen, Vereins für naturwissenschaftliche Unterhaltung zu Hamburg, x, '99.—**Butler, A. G.** A list of the species of *Cyaniris*, a well-known group of the family Lycænidæ, **11,** May ; On a small collection of insects, chiefly Lepidoptera from Nicaragua, **9,** July.—**Chapman, T. A.** Some points in the evolution of the Lepidopterous antenna, 1 pl., **131;** The relationship between the larval and imaginal legs of Lepidoptera, 1 pl., **21,** June 1, July 1.—**Delahaye, F.** Polymorphism of Lepidoptera in Maine-et-Loire, Memoires, Société Nationale d'Agriculture, Sciences et Arts d'Angers, (5), ii, 1900.—**Dognin, P.** New Heterocera from South America, **35,** 5, June 8 —**Druce, H.** Descriptions of some new genera and species of Heterocera from tropical South America*, **11,** June, July.—**Dyar, H. G.** Life histories of North American Geometridæ, xii, **5,** June.—**French, G. H.** The genus *Catocala**, **4,** June.—**Frings, C.** Experiments with lowered temperature in the year 1899, **40,** May 15, June 1.—**Fyles, T. W.** The "entomological muddle," a rejoinder, 1 pl., **4,** July.—**Gauckler, H.** Melanism among Macrolepidoptera, **84,** July 12.—**Grose-Smith, H.** Rhopalocera Exotica, being Illustrations of New, Rare, or Unfigured Species of Butterflies. London, Gurney and Jackson. Part 51, Jan. 1900. Part 52, April, 1900.—**Grote, A. R.** A new *Catocala* from Texas*, **4,** June ; Types of Noctnid genera, **4,** July.—**Hoffman, H.** Do the hairs of young caterpillars serve as a means of transportation [by wind-carriage]? **84,** July 5.—**Hulst, G. D.** Some new genera and species of Phycitinæ*, **4,** June.—**Kathariner, L.** On the relations between the markings of the front and the hind wings of Lepidoptera. fig., **84,** May 24.—**Moore, F.** Lepidoptera Indica, parts xlii, xliii, London, Lovell Reeve and Co., 1899. Rec'd. June 4, 1900. [Vol. iv, pp. 113-136, pls. 325-332, pp. 137-160, pls. 333-340. Nymphalinæ, group Nymphalina continued].—**Quail, A.** A fragmentary paper on the larval structure, etc., of *Hepialus? virescens* (D'bld) of New Zealand. 1 pl., **109.—Rauterberg, F.** List of Lepidoptera of the County of Milwaukee (cont.), **123.—Santini de Riols, E.** See Economic Entomology.—**Soule, C. G.** Some mating notes, **5,** June.—**Standfuss, M.** Synopsis of experiments in hybridization and temperature made with Lepidoptera up to the end of 1898, 1 pl. [Transl. from German orig.], **9,** June.—**Tutt, J. W.** Migration and dispersal of insects : Lepidoptera, **21,** May 15-Aug. 1.—**Vayssière, A.** and **Bordas, L.** Study of the case of a species of Psychid from the neighborhood of Tombouctou, 1 pl., Annales de la Faculté des Sciences de Marseille. x, 5. Rec'd July 9, 1900.—**Weeks, A. G.** See notice, *post.*

HYMENOPTERA.—Aaron, S. F. Case of double parasitism [*Osmia* on *Trypoxylon* in *Pelopæus* cells], figs., **132,** June.—**Ash-**

mead, W. H. Classification of the fossorial, predaceous and parasitic wasps, or the superfamily Vespoidea, paper No. 2, **4,** June; On the genera of the Chalcid-flies belonging to the sub-family Encyrtinæ, Proceedings, United States National Museum, No. 1202, Washington, 1900.—**Buscalioni, L.** and **Huber, J.** A new theory of the "ant plants," Beihefte zum Botanischen Centralblatt, ix, 2, Cassel, 1900.—**v. Buttel-Reepen, H.** Are bees reflex machines? Experimental contributions to the biology of the honeybee (concl.), **81,** May 1.—**Cockerell, T. D. A.** Observations on bees collected at Las Vegas, New Mexico, and in the adjacent mountains*, **11,** May; The cactus bees, genus *Lithurgus* **3,** June; The New Mexico bees of the genus *Megachile* and a new *Andrena**, **11,** July.—**Ferton, C.** Observations on the instinct of *Bembex* Fabr., Actes, Société Linnéenne de Bordeaux, liv, '99.—**Forel, A.** Hymenoptera, vol. iii, pp. 161-169 and title page, **15.**—**Frey-Gessner, E.** Hymenoptera Helvetiæ [cont., pp. 85-116], **56.**—**Friese, H.** New species of the bee-genera *Epicharis* Klug and *Centris* Fabr.* [two papers], **49;** Remarks on the bee genus *Euglossa* Latr., **49**—**Howard, L. O.** A new genus of Aphelininæ from Chile, **4,** June.—**Janet, C.** On the balls of dirt cleaned out by ants, **30b;** On the presence of naked nymphs in the nests of *Lasius flavus*, **30b;** On the cephalic nerves, the corpora allata and the tentorium of the ant, 4 pls., **30m.**—**Kieffer, J. J.** Cynipidæ, forming vol. vii of Species des Hyménoptères d' Europe et d' Algerie fondé par Edmond André et continué sous la direction de Ernest André. 69e fascicule, Paris, Jan. 1, 1900. Rec'd May 23. Ph. 433-512, pls. xix, xx.—**Koschevnikov, G. A.** On the fat-bodies and the œnocytes of the Honeybee (*Apis mellifica L.*) (preliminary communication), **22,** June 25.—**Küster, E.** Contributions to knowledge of the anatomy of galls, figs., Flora, lxxxvi, 2, Marburg, Apr. 12, '00.—**Macgillivray, A. D.** *Tenthredo*, new species*, **4,** June.—**Michaëlis, G.** Structure and development of the male copulatory apparatus in the honeybee, 1 pl., **97.**—**Mitchell, A. B.** The tarantula wasp, **132,** May.—**Murtfeldt, M. E.** New Tineidæ with life histories*, **4,** June.—**Oudemans, J. T.** *Trichisoma lucorum*, L., a biological study [in Dutch], 1 pl., Tijdschrift voor Entomologie, xlii, 4, The Hague, March 9, '00.—**Peckham, G. W.,** and **E. G.** Additional observations on the instincts and habits of the solitary wasps, **123.**—**Plateau, F.** Vision in *Anthidium manicatum*, L., Volume Jubilaire Cinquantenaire, Société de Biologie de Paris, '99.—**Robertson, C.** Some Illinois bees*, Transactions, Academy of Science, St. Louis, x, 2, Feb. 21, '00.—**Wasmann, E.** See Neuroptera.—**Zander, E.** Contributions to the morphology of the male sexual appendages of the Hymenoptera, figs., 1 pl., **97.**

Illustrations of Hitherto Unfigured Lepidoptera. By **A. G. Weeks, Jr.** Published by the author. "Believing that, when circumstances permit, colored illustrations should accompany the descriptions of new species of Lepidoptera, I take pleasure in submitting the first of a series of papers

in which I intend to publish illustrations, with descriptive text, of previously unfigured species from my collection." *Hypolycæna festata*, *Lemonias Maximæ*, *Pyrgus pelagica*, *Myscelia Streckeri*, *Colias hecate* and *Prola pandora* ♀ are figured in a most beautiful manner, both sides of the insects being shown. Mr. Weeks is to be congratulated on the appearance of this excellent contribution to the literature of the Lepidoptera. We shall look forward with pleasure to the appearance of further contributions of a like character.—H. SKINNER.

Our knowledge of the geographical distribution of the North American Odonata grows steadily. A considerable addition to the data furnished by Dr. Scudder and Mrs. Slosson for New Hampshire is Mr. **Edward J. Burnham's** "Preliminary Catalogue of the Anisoptera in the vicinity of Manchester, N. H.," published in **130,** enumerating 28 species of this suborder, with notes on their habits, etc. It appears that *Macromia illinoensis*, which occurs in hundreds in a particular station near Manchester, is preyed upon by birds to such an extent that, after the slaughter, the "careful observer will discover wings in vast numbers scattered beneath the trees." One male each of *Neurocordulia obsoleta* and of *Pantala flarescens* are recorded; this is the most northern locality in the eastern United States now known for this latter, cosmopolitan species.

A more extensive work is Mr. **E. B. Williamson's** "The Dragonflies of Indiana." (24th Annual Report of the Department of Geology and Natural Resources of Indiana, pp. 229–333, 1003–1011, 7 plates, Indianapolis, 1900.) This fills the same place for Indiana that Prof. Kellicott and Mr. Hine's "Odonata of Ohio" does for that State. Descriptions of 84 species, positively known to have been found, and of others likely to occur, are given, with many data on habits, place and time of appearance of the imagos. A key to all the known genera, pp. 247–251, and keys to the species under each genus facilitate identification. Pp. 223–244 contain a general account of these insects. A feature of the present work, not often met with, is the addition of the etymology of the generic and specific names. A good glossary and index occupy pp. 1003–1010. Mr. Williamson has collected much in the vicinity of Bluffton and elsewhere, while the other chief sources of the material have been Mr. R. J. Weith of Elkhart, Mr. C. C. Deam and Mr. W. S. Blatchley, Orthopterist and State Geologist. As regards the species represented we may note a new *Enallagma, piscinarium*, allied to *geminatum* Kell.; the identification of the long lost *Agrion antennata* Say as *Enal. Fischeri* Kell., the species being now consequently known as *E. antennatum*, while in the genus *Gomphus* we may take this opportunity of making a correction affecting both the present work and Kellicott's "Odonata of Ohio." Specimens kindly loaned for the purpose by Messrs. Adams, Hine and Williamson have enabled me to ascertain that the *G. externus* Kell. and *G. externus* Wllmsn. are in reality *G. crassus* Hagen, as Mr. Williamson suspects in this very paper. The true *externus*, although in-

habiting Illinois, does not appear to have yet been found in Indiana or Ohio. (I hope to shortly publish a brief paper on this question, giving the specific distinctions of *fraternus*, *crassus* and *externus*.) Four of the plates of the work under notice illustrate structure and the use of terms; the other three figure specific characters of *Enallagma*, *Gomphus*, *Lestes*, *Argia*, *Æschna* and *Sympetrum*. Altogether, Mr. Williamson's work is *very good*.

One would not ordinarily look in a paper on "Odonaten aus New-Guinea" (**49**) for the description of a new genus from North America. Herr **F. Forster** has doubtless included it, however, for the sake of comparison with a certain Papuan form. The new genus in question is *Nasiæschna*,† erected for *Æschna pentacantha* Rambur. The diagnosis is in French, from the pen of Baron de Selys-Longchamps. The name refers to the character of the nasus, which is greatly excavated. The relationship is stated to be with *Epiæschna*, *Brachytron* and *Acanthæschna*. —P. P. CALVERT.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor Prof. John B. Smith, Sc.D., New Brunswick, N. J.

FISH OIL SOAP FOR THE ROSE BUG.

Macrodactylus subspinosus Fab.

In ENT. NEWS, Vol. XI, p. 373, Prof. J. B. Smith records his suspicion that a solution of one-half pound of fish oil soap in a gallon of water will not kill the rose bug, *Macrodactylus subspinosus*, as reported on p. 70 of Bull. 20, N. S., Div. Ent., U. S. Dept. of Agric.

It was my privilege to make the test under Prof. Webster's direction, and hence I am quite familiar with details.

The destruction of the females was a surprise. I "examined closely" and found that the females greatly distended with eggs were the most susceptible—they were *not* "worn-out specimens." The males and newly emerged females were the most important. If you observe closely, you will find that in the distended females the spiracles are exposed. In the males and newly emerged females the spiracles are covered by the elytra. But as they struggle about to escape, the solution reaches the spiracles and they die in a short time. As pointed out in the discussion at Columbus, this fact is quite significant and makes further explanation unnecessary. The spray was not "an impalpable mist." As the beetles cluster preferably on the blossoms and the fruit, the spray was turned directly upon them, thus giving them a more thorough wetting than in ordinary spraying a tree.—C. W. MALLY, Cape Town, So. Africa.

† Ought not this to be *Rhinaeschna?* P. P. C.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

On page 498, June, 1900, ENT. NEWS, is a note by Prof. Ellison A. Smyth, Jr. He is made to say the following: "I am sure that *tenuis, diffinis, uniformis, thysbe*, are the same." His copy read as follows: "*tenuis* : *diffinis* : : *uniformis* : *thysbe*. The "printer's devil," not understanding algebraic equations, got the thing into a snarl. Had the learned Professor eschewed algebra and used English as follows: *tenuis* is to *diffinis* as *uniformis* is to *thysbe*, the "devil" would have had no excuse to play tricks. Prof. Smyth will have a very interesting article on this subject in a future number of the NEWS.

EVERY Entomologist should have a copy of the "Entomologist's Directory," which contains names and addresses and lines of study of 1200 American Entomologists. Published by the American Entomological Society.

THE "Revision of the North American species of the genus *Cœnonympha*," by Henry Skinner, just published by the American Entomological Society, gives the original descriptions of all the species, and contains a three-color process plate representing eighteen figures and all the known American species.

THE "Kissing Bug" is again epidemic in Philadelphia, and there is great danger from overcrowding in the wards of the hospitals. According to the daily press Dr. ———, of the Jefferson Hospital staff, knows more about the far-famed osculatory "*beetle*" and its habits than any other person. He has treated more than one hundred cases, and has a large collection of the "*bugs*." He found that in nearly every case the insect was a long black beetle, with a sting like that of the honey-bee. The victims never have any pain, but awaken in the morning with their lips inflated. Another Philadelphia scientist explains that there is no such thing as a "kissing-bug," and that the damage is all done by a spider that perforates the lips of victims with its antennæ. The famous kisser is often illustrated, and sometimes looks like a cross between *Thalessa lunator* and *Gryllotalpa borealis*. The "kissing bug," however, is likely to sink into insignificance when the "locomobile bug" appears in August. This insect has a long snout and bores into the kerosene tank of the horseless wagon, and the result is a terrific explosion. Now this is really serious and often causes death, whereas the "kissing-bug" seldom does, and the "bicycle-tire bug" is only most aggravating and often lets the wind out of a tire when the victim is on a "century run." ! ! ! !

BUG PUNCTURES BICYCLE TIRES.—Evanston is now presenting to science the latest freak in bugs—the "bicycle" bug. This hornet-like insect looks like a caricature of a New Jersey mosquito. On a body little more than an inch long it supports a pair of tentacles four inches long, with which it works havoc with the rubber tires of the wheels. The bug bores into the rubber until the escaping air frightens it away.

The first wheelman to suffer was Peter Arndt. He found one of the tires flat, while on the other one was the first "bicycle" bug that has yet been captured. He took his prize to Witt Bros.' repair-shop, where it soon drew a crowd of curious spectators. Before the afternoon had passed a number of Chicago wheelmen told the same story of the strange bug.

Professor William A. Locy, of the Northwestern University biological laboratories, called the bug an *ichneumon*. It is not common in this country. Its usual place of burying its tentacles is in the bark of a tree, laying its eggs through them. Professor Locy said that perhaps the bug mistook the soft rubber for the pulp on the trees.—*Newspaper.*

Doings of Societies.

The May meeting of the Feldman Collecting Social, was held at the residence of Mr. H. W. Wenzel, 1523 South 13th St.; eleven persons were present.

Mr. Harbeck reported the capture of *Calosoma Willcoxi*, a rare beetle in this locality.

Mr. H. Wenzel stated that he had on one occasion observed members of this species devouring caterpillars in Cape May Co., New Jersey.

Mr. Bœrner reported the capture of a specimen of this species on May 16th.

The occasional occurrence in abundance of several rare species of coleoptera was discussed by Messrs. H. W. Wenzel, Bœrner, Harbeck and Fox.

Mr. Bœrner gave the results of sifting for Pselaphidæ along the Neshaminy Creek, Pennsylvania. The collection included *Rhexidius canaliculatus*, *Rhexius globosus*, an unidentified species of *Batrisus*, and one of *Tychus*.

Dr. Castle stated that while he had found *Megalonycha fusculata* last year in great abundance at Angora, Pa., this year only a single specimen had been taken.

Mr. H. Wenzel exhibited specimens of *Bryaxus abdominalis* showing peculiar sexual characteristics. Of the specimens recently taken, the average was three males, against twenty-five females.

Specimens of *Anthocharis genutia*, *Nisoniades martialis*, *Thecla smilacis Thecla augustus*, were reported as having been taken on April 29th, at Laurel Springs, New Jersey, by Mr. F. Hoyer.

WILLIAM J. FOX, *Secretary.*